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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/575,551	05/22/00	THOMPSON	P97-0041US3

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PM82/0830

EXAMINER

KEENAN, J

ART UNIT	PAPER NUMBER
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3652

DATE MAILED: 08/30/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Advisory ActionApplication No.
09/575,551Applicant(s)
Thompson et alExaminer
James KeenanArt Unit
3652

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

THE REPLY FILED _____ FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

Therefore, further action by the applicant is required to avoid the abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

THE PERIOD FOR REPLY [check only a) or b)]

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
- b) ☐ In view of the early submission of the proposed reply (within two months as set forth in MPEP § 706.07 (f)), the period for reply expires on the mailing date of this Advisory Action, OR continues to run from the mailing date of the final rejection, whichever is later. In no event, however, will the statutory period for the reply expire later than SIX MONTHS from the mailing date of the final rejection.

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☒ A Notice of Appeal was filed on Aug 20, 2001. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will be entered upon the timely submission of a Notice of Appeal and Appeal Brief with requisite fees.
3. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search. (See NOTE below);
- (b) ☐ they raise the issue of new matter. (See NOTE below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without cancelling a corresponding number of finally rejected claims.

NOTE: _____

4. ☐ Applicant's reply has overcome the following rejection(s):

5. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment cancelling the non-allowable claim(s).
6. ☐ The a) ☐ affidavit, b) ☐ exhibit, or c) ☐ request for reconsideration has been considered but does NOT place the application in condition for allowance because:

7. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
8. ☒ For purposes of Appeal, the status of the claim(s) is as follows (see attached written explanation, if any):
Claim(s) allowed: _____
Claim(s) objected to: _____
Claim(s) rejected: 56, 57, 62, 64, and 65
9. ☐ The proposed drawing correction filed on _____ a) ☐ has b) ☐ has not been approved by the Examiner.
10. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
11. ☐ Other: _____

James Keenan
JAMES KEENAN
PRIMARY EXAMINER
ART UNIT 3652
8/28/01

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1. Applicant's election without traverse of Group I and Species B in Paper No. 7 is acknowledged. Applicant's cancellation of claims 64-68 drawn to Group II has effectively made the restriction moot. New claims 69-73 will be examined along with the Group I claims.
2. Claims 60-63 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected species. Election was made **without** traverse in Paper No. 7. Although applicant has indicated that all pending claims read on Species B, claims 60-63 are drawn to subject matter shown only in figures 1 and 6-12, which is Species A.
3. The disclosure is objected to because of the following informalities: On page 54, line 16, "removable" should be --removal--.

Appropriate correction is required.
4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 56-59 and 69-73 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 1 of claims 56 and 69, "or similar articles" is vague.

In claim 69, fourth-to-last line, "and" should be deleted.

In claim 71, there is no antecedent basis for "the ... machine" or "the shelf".

In claim 72, line 1, there is no antecedent basis for "the ... system", and it is not clear what is meant by "further comprising an enclosure ... and an interface port" as these elements have already been recited in claim 69.

In claim 73, line 1, there is no antecedent basis for "The ... subsystem".

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claims 56-59 are rejected under 35 U.S.C. 102(e) as being anticipated by Iwai et al (US 5,562,383, supplied by applicant).

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Iwai et al show a semiconductor processing system including an enclosed workspace having an interface port 14 through which semiconductor articles are moved, docking station 36 for receiving sealed wafer container 30 which holds wafer carrier C, container operator 41 which opens and closes the container, relay mechanism 42 pivotable about a horizontal axis for moving the articles from the docking station, a transfer comprising carriages 47 and 50 which receives articles from the relay mechanism, processing station 1, and conveyor 7, 28 which conveys articles to and from the processing station.

Re claim 59, the transfer transfers articles from the carrier to a boat 6 which is considered to be a tray, as broadly claimed.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 69-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai et al in view of Kawabata (US 4,744,715).

Iwai et al show the relay mechanism to include an engagement head 42a on an arm, with movable catches 43, and to be aligned with a vertically movable support panel of the container

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operator to allow the catches to engage the article carrier, but do not show the relay mechanism to move the articles in the carrier from a horizontal to a vertical orientation.

Kawabata shows a wafer transfer apparatus including arm 10 for pivoting a wafer carrier C1 about a horizontal axis such that the wafers therein are moved from a horizontal to a vertical orientation prior to the wafers being removed therefrom.

It would have been obvious for one of ordinary skill in the art to have modified the apparatus of Iwai et al by moving the wafers to a vertical orientation as the relay mechanism transfers the carrier from the docking station, as Kawabata teaches that moving wafers in a carrier from a horizontal to a vertical orientation prior to their processing is well known in the art, as certain processes are desirably performed on wafers in a vertical orientation.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is (703) 308-2559.

jwk

November 3, 2000

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1. Claims 60-63 remain withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected species. Election was made **without** traverse in Paper No. 7.
2. The amendment filed 11/5/99 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the recitation in claims 56 and 76 of generic "articles" is broader in scope than that set forth in the original disclosure, which is limited to semiconductor articles requiring very low contaminant levels.

Applicant is required to cancel the new matter in the reply to this Office action.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 56-59 and 75-78 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As noted above, the recitation of “articles” is broader in scope than set forth in the original disclosure and therefore constitutes new matter.

6. Claims 56-59 and 75-78 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: between the relay, the articles, and the article container. Independent claims 56 and 76 state that the relay moves the articles but fails to set forth any structural relationship of those elements with the article container.

7. Claims 56-59, 69-75 and 79 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 56, line 7, it is not clear if “a sealed article container” is the same “article container” set forth in line 4.

In claims 56 and 76, it is not clear what would constitute horizontal and vertical positions of the articles, inasmuch as there is no relationship thereof with the article container set forth.

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In line 1 of claim 69, "or similar articles" is vague.

In claim 71, there is no antecedent basis for "the shelf".

In claim 72, lines 1-2, "claim 69 with" is not understood.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 56-59 and 69-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai et al in view of Kawabata.

Iwai et al show a semiconductor processing system including an enclosed workspace having an interface port 14 through which semiconductor articles are moved, docking station 36 for receiving sealed wafer container 30 which holds wafer carrier C, container operator 41 which opens and closes the container, relay mechanism 42 pivotable about a horizontal axis for engaging the article carrier and thus moving the articles from the docking station, a transfer comprising carriages 47 and 50 which receives articles from the relay mechanism, processing station 1, and conveyor 7, 28 which conveys articles to and from the processing station.

Iwai et al show the relay mechanism to include an engagement head 42a on an arm, with movable catches 43, and to be aligned with a vertically movable support panel of the container

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operator to allow the catches to engage the article carrier, but do not show the relay mechanism to move the articles in the carrier from a horizontal to a vertical orientation.

Kawabata shows a wafer transfer apparatus including arm 10 for pivoting a wafer carrier C1 about a horizontal axis such that the wafers therein are moved from a horizontal to a vertical orientation prior to the wafers being removed therefrom.

It would have been obvious for one of ordinary skill in the art to have modified the apparatus of Iwai et al by moving the wafers to a vertical orientation as the relay mechanism transfers the carrier from the docking station, as Kawabata teaches that moving wafers in a carrier from a horizontal to a vertical orientation prior to their processing is well known in the art, as certain processes are desirably performed on wafers in a vertical orientation.

Re claim 59, the transfer mechanism of Iwai et al transfers articles from the carrier to another carrier 6, which, as noted above, maintains the articles in a horizontal orientation. However, since the modified apparatus of Iwai et al moves the articles to a vertical orientation, it would have been an obvious design expediency to have utilized a tray with upwardly facing grooves as the carrier to which the articles would be transferred, as this would hold the articles in a vertical position.

Re claims 69 and 78, since the structure of the article carrier has not been set forth with any specificity, the ability of the engagement head of the relay mechanism to hold an open end of the carrier is not deemed to patentably distinguish over the modified Iwai et al apparatus, as this is merely a functional limitation for which the said apparatus is capable of performing.

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Re claim 74, absent any showing of criticality, the feature of the catches being movable linearly is considered to be an obvious alternate equivalent expediency to the pivotal catches of Iwai et al.

10. Applicant's arguments filed 11/5/99 have been fully considered but they are not persuasive.

Applicant argues that in Iwai et al the wafers remain horizontal and thus there is no motivation to move them into a vertical orientation, and further argues that even if it is known in the art that some processes may desirably be performed on wafers in a vertical orientation (as the first office action stated), there would be no motivation to modify Iwai et al based on Kawabata because that reference is not concerned with processing and because systems which do perform processes on vertically oriented wafers do not change the orientation of the wafers. Applicant also argues that the details of the Kawabata reorienting mechanism do not conform to the limitations set forth in the claims.

The prior art does not support the assertion that wafers which are to be processed always remain in the same orientation from insertion into a system until processing. Previously cited references Sakata et al, Iwabuchi, and Ishii et al all show wafer processing systems generally similar to that shown by Iwai et al in which wafers in a carrier are initially received in one of a vertical or horizontal orientation and are transferred into the other of a horizontal or vertical orientation prior to processing. Thus, the prior art shows that it is generally known to reorient wafers between vertical and horizontal orientations based on processing requirements. While it is

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true that Kawabata may not show the same type of relay for performing the reorientation of the wafers, the relevant aspect of Kawabata is that the reference supports the showing that, based on what is generally known in the art, moving wafers from a horizontal to a vertical orientation would have been a desirable modification to the apparatus of Iwai et al. The relay mechanism of Iwai et al, being a multi-jointed robotic arm, clearly has the capability to move the wafer carrier such that the wafers therein would be oriented vertically. Thus, modifying Iwai et al as suggested would have required no undue experimentation and produced no unexpected results.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is (703) 308-2559.

jwk

November 3, 2000